

4. (Amended) The olefin branched macromonomer as claimed in claim 1, for which the monomer to constitute it is ethylene, or a combination of ethylene and at least one selected from α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, and of which the ethylene content falls between 50 and 99.9 mol%.

5. (Amended) The olefin branched macromonomer as claimed in claim 1, for which the monomer to constitute it is ethylene or propylene.

6. (Amended) An olefin graft copolymer obtained by copolymerizing the olefin branched macromonomer of claim 1 with at least one comonomer selected from ethylene, propylene, α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a metallocene catalyst.

7. (Amended) An olefin graft copolymer obtained by copolymerizing the olefin branched macromonomer of claim 1 with at least one comonomer selected from ethylene, propylene, α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a Ziegler-Natta catalyst.

8. (Amended) The olefin graft copolymer as claimed in claim 6, which satisfies the following (1) and/or (2):

(1) its intrinsic viscosity $[\eta]$ measured in a solvent decalin at 135°C falls between 0.3 and 15 dl/g;

(2) it contains from 0.01 to 70% by weight of the olefin branched macromonomer satisfying the following (a) and (b):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 400 and 200000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer.

9. (Amended) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the olefin graft copolymer of claim 6.

11. (Amended) The olefin resin composition as claimed in claim 9, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid ^1H -NMR ($1/R_1$) falls between 1.0 and 2.0 (1/sec) to the relaxation rate ($1/R_1$)₀ of the long-term relaxation component, measured through solid ^1H -NMR, of a resin composition not containing the propylene branched macromonomer satisfying the following (a) and (b):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 400 and 200000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

14. (Amended) The propylene macromonomer as claimed in claim 12, for which the monomer to constitute it is ethylene and propylene.

15. (Amended) An olefin graft copolymer obtained by copolymerizing the propylene macromonomer of claim 12 with at least one comonomer selected from ethylene, propylene, α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a metallocene catalyst.

16. (Amended) An olefin graft copolymer obtained by copolymerizing the propylene macromonomer of claim 12 with at least one comonomer selected from ethylene, propylene, α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a Ziegler-Natta catalyst.

17. (Amended) The olefin graft copolymer as claimed in claim 15, which contains from 0.01 to 40% by weight of the propylene macromonomer satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%.

18. (Amended) The propylene graft copolymer as claimed in claim 15, which satisfies the following (1) and/or (2)

(1) its intrinsic viscosity $[\eta]$ measured in a solvent decalin at 135°C falls between 0.3 and 15 dl/g;

(2) the ratio of the weight-average molecular weight (M_w) to the number-average molecular weight (M_n) thereof measured through GPC, M_w/M_n , falls between 1.5 and 4.5.

19. (Amended) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the propylene graft copolymer of claim 15.

21. (Amended) The olefin resin composition as claimed in claim 19, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid ^1H -NMR ($1/R_1$) falls between 1.0 and 2.0 (1/sec) to the relaxation rate ($1/R_1$)₀ of the long-term relaxation component, measured through solid ^1H -NMR, of a resin composition not containing the propylene graft copolymer obtained by copolymerizing the propylene macromonomer of claim 12 with at least one comonomer selected from ethylene, propylene,

α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a Ziegler-Natta catalyst satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$[(1/R_1)/(1/R_1)_0] \geq 1.01.$

Please add the following new claims:

22. (New) The olefin graft copolymer as claimed in claim 7, which satisfies the following (1) and/or (2):

(1) its intrinsic viscosity $[\eta]$ measured in a solvent decalin at 135°C falls between 0.3 and 15 dl/g;

(2) it contains from 0.01 to 70% by weight of the olefin branched macromonomer satisfying the following (a) and (b):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 400 and 200000.

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer.

23. (New) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the olefin graft copolymer of claim 7.

24. (New) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the olefin graft copolymer of claim 8.

25. (New) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the olefin graft copolymer of claim 22.

26. (New) The olefin resin composition as claimed in claim 23, of which the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec).

27. (New) The olefin resin composition as claimed in claim 24, of which the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec).

28. (New) The olefin resin composition as claimed in claim 25, of which the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec).

29. (New) The olefin resin composition as claimed in claim 23, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec) to the relaxation rate ($1/R_1$)₀ of the long-term relaxation component, measured through solid $^1\text{H-NMR}$, of a resin composition not containing the propylene branched macromonomer, $[(1/R_1)/(1/R_1)_0]$ satisfying the following (a) and (b):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 400 and 200000,

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

30. (New) The olefin resin composition as claimed in claim 24, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec) to the relaxation rate $(1/R_1)_0$ of the long-term relaxation component, measured through solid $^1\text{H-NMR}$, of a resin composition not containing the propylene branched macromonomer, $[(1/R_1)/(1/R_1)_0]$ satisfying the following (a) and (b):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 400 and 200000,

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

31. (New) The olefin resin composition as claimed in claim 25, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec) to the relaxation rate $(1/R_1)_0$ of the long-term relaxation component, measured through solid $^1\text{H-NMR}$, of a resin composition not containing the propylene branched macromonomer, $[(1/R_1)/(1/R_1)_0]$ satisfying the following (a) and (b):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 400 and 200000,

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

32. (New) The olefin graft copolymer as claimed in claim 16, which contains from 0.01 to 40% by weight of the propylene macromonomer satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%.

33. (New) The propylene graft copolymer as claimed in claim 16, which satisfies the following (1) and/or (2)

(1) its intrinsic viscosity $[\eta]$ measured in a solvent decalin at 135°C falls between 0.3 and 15 dl/g;

(2) the ratio of the weight-average molecular weight (Mw) to the number-average molecular weight (Mn) thereof measured through GPC, Mw/Mn, falls between 1.5 and 4.5.

34. (New) The propylene graft copolymer as claimed in claim 17, which satisfies the following (1) and/or (2)

(1) its intrinsic viscosity $[\eta]$ measured in a solvent decalin at 135°C falls between 0.3 and 15 dl/g;

(2) the ratio of the weight-average molecular weight (Mw) to the number-average molecular weight (Mn) thereof measured through GPC, Mw/Mn, falls between 1.5 and 4.5.

35. (New) The propylene graft copolymer as claimed in claim 32, which satisfies the following (1) and/or (2)

(1) its intrinsic viscosity $[\eta]$ measured in a solvent decalin at 135°C falls between 0.3 and 15 dl/g;

(2) the ratio of the weight-average molecular weight (M_w) to the number-average molecular weight (M_n) thereof measured through GPC, M_w/M_n , falls between 1.5 and 4.5.

36. (New) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the propylene graft copolymer of claim 33.

37. (New) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the propylene graft copolymer of claim 34.

38. (New) An olefin resin composition comprising 100 parts by weight of a thermoplastic resin, and from 0.05 to 70 parts by weight of the propylene graft copolymer of claim 35.

39. (New) The olefin resin composition as claimed in claim 33, of which the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec).

40. (New) The olefin resin composition as claimed in claim 34, of which the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec).

41. (New) The olefin resin composition as claimed in claim 35, of which the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec).

42. (New) The olefin resin composition as claimed in claim 36, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$

(1/R₁) falls between 1.0 and 2.0 (1/sec) to the relaxation rate (1/R₁)₀ of the long-term relaxation component, measured through solid ¹H-NMR, of a resin composition not containing the propylene graft copolymer obtained by copolymerizing a propylene macromonomer satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, with at least one comonomer selected from ethylene, propylene, α-olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a Ziegler-Natta catalyst satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, [(1/R₁)/(1/R₁)₀], satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

43. (New) The olefin resin composition as claimed in claim 37, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid ¹H-NMR (1/R₁) falls between 1.0 and 2.0 (1/sec) to the relaxation rate (1/R₁)₀ of the long-term relaxation component, measured through solid ¹H-NMR, of a resin composition not

containing the propylene graft copolymer obtained by copolymerizing a propylene macromonomer satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, with at least one comonomer selected from ethylene, propylene, α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a Ziegler-Natta catalyst satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (M_w) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

44. (New) The olefin resin composition as claimed in claim 38, of which the ratio of the relaxation rate of the long-term relaxation component measured through solid $^1\text{H-NMR}$ ($1/R_1$) falls between 1.0 and 2.0 (1/sec) to the relaxation rate $(1/R_1)_0$ of the long-term relaxation component, measured through solid $^1\text{H-NMR}$, of a resin composition not containing the propylene graft copolymer obtained by copolymerizing a propylene macromonomer satisfying the following (a), (b) and (c):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, with at least one comonomer selected from ethylene, propylene, α -olefins having from 4 to 20 carbon atoms, cyclic olefins and styrenes, in the presence of a Ziegler-Natta catalyst satisfying the following

(a), (b) and (c):

(a) its weight-average molecular weight (Mw) measured through gel permeation chromatography (GPC) falls between 800 and 500000;

(b) its vinyl content is at least 70 mol% of all the unsaturated groups in the macromonomer;

(c) its propylene content falls between 50 and 100 mol%, $[(1/R_1)/(1/R_1)_0]$, satisfies the following relationship:

$$[(1/R_1)/(1/R_1)_0] \geq 1.01.$$

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